U.S. Department
of Transportation
National Highway
Traffic Safety
Administration

Emergency Medical Technician — Intermediate: National Standard Curriculum

Course Guide

Contents

Foreword

Emergency Medical Technicians have performed a valuable service for our country for a number of years. The role of the Basic EMT contributes greatly to the enhancement of emergency medical care of the ill and injured. The Basic EMT level is perceived to be somewhat of an "independent practice" role in that the EMT at the scene has all the knowledge and skills to deliver care without orders from another section of the EMS system. The role of the advanced EMT is significantly different in that there is a "partnership role" with the institution providing Medical Control. Therefore the transition from a basic provider level to the advanced provider level is a very important one.

One of the many tasks involved in developing advanced prehospital care is determining what the optimal level of care is. From a national perspective that optimal level is considered to be the EMT-Paramedic. The content of the EMT-P training program was arrived at by the National Academy of Science/National Research Council in the early 1970's.

The EMT-P curriculum then and now is the end result of the careful balancing of many different factors. It was recognized early that the EMT-P would be the highest trained person available in the prehospital setting and therefore needed training in as many potential emergency situations as possible. This had to be balanced with facts such as the cost, the length, and the degree of difficulty of such programs would have to remain within reason. The availability of skills maintenance opportunities had to be balanced with the *need* for certain difficult techniques. When all of these and many other factors were considered, it appeared the optimal was the EMT-P training level.

However, over time greater emphasis was given to certain of the same factors considered in the development of the EMT-P level, and in reconsidering with a change in emphasis, a *different* result appeared. Emphasis was not placed on training for as many emergencies as possible but more on those areas of greatest incidence. Similarly the time and depth of preparing was altered, and those skills that required less skill maintenance were included.

The result of the re-thinking did not change the conclusion of what is optimal—the EMT-P—but did result in purposeful levels other than the basic EMT and the EMT-Paramedic. In 1980 the National Registry of Emergency Medical Technicians, recognizing the need for an evaluation tool for the most significant of these levels, developed the EMT-Intermediate examination.

It became clear that depending on the factors one chose to emphasize, there could be numerous options for levels between the Basic EMT and EMT-Paramedic levels. Therefore, in 1982 Department of Transportation/National Highway Traffic Safety Administration (DOT/NHTSA) sponsored a study conducted by the National Council of State Emergency Medical Services Training Coordinators. The purpose of the study was to collect data nationwide and to collate this information and ultimately recommend both content and nomenclature for existing levels. The National Council project identified the significant levels of program development across America and subsequently labeled the first level beyond the Basic EMT as the EMT-Intermediate.

It is important to understand the true meaning of the data collected during this project for it substantiates the principle from which the EMT-Intermediate level has been developed. Simply stated, the EMT-Intermediate level has as its base the basic

EMT program and then has certain proven clinical skills and knowledge to support the skills added to the basic program. The program is not intended necessarily to be a stepping stone to the EMT-Paramedic level, but rather to be complete for that particular level of patient care. The application of this principle impacts dramatically on the implementation of the EMT-Intermediate level. The "EMT plus" orientation versus the "EMT-P minus" attitude helps to maintain perspective when developing the training program.

The National Paramedic Committee was charged in mid-1983 with the development of a curriculum for the EMT-Intermediate level. This level does not conflict or compete with the EMT-Paramedic level; it is simply another level that exists as a result of different factors being emphasized.

Introduction

The program described in this text is based on the original recommendations of the Department of Transportation supported Emergency Medical Technician-Paramedic (EMT-P) Committee. It also reflects the experience derived from the advanced EMT training programs and systems across the United States. The program is designed to be presented in its entirety. If the student successfully completes the entire revised program, he will have met the current standards of the National Standard Training Curriculum (NSTC) of EMT-Intermediates.

The time involved in teaching an acceptable depth of competency depends in large part on the student's prior experience and training and on his or her exposure to emergency situations during the clinical and field internship phases of instruction. However, an estimated 40–55 hours of instruction will be necessary to bring the student to full EMT-I competency. Some of the variables that may affect the length of the training program include:

—Individual students reading/comprehension levels

—Teacher/student ratio

—Student motivation

—Prior emergency/health experience and/or training

—Prior educational achievements, i.e., GED versus high school versus college graduate

—Number of emergency ALS runs during field internship

—Quality of overall training program, i.e., quality of course coordinator, available lecturers, clinical affiliations, etc.

The Emergency Medical Technician-Intermediate Training Program

Purpose of the Course Guide

This Course Guide has been prepared to help administrators, course coordinators, and instructors plan and implement a training program for EMT-Intermediates. It contains a description of the training program; suggestions for course planning, including class size, scheduling of classes, recommended facilities, training aids, and instructor and student prerequisites; guidelines for conducting the course; recommendations for student evaluation; and suggestions for and implementation of this training program. Finally, the Course Guide is a statement of policy that sets forth minimum standards for developing the structure and quality of EMT-Intermediate training programs. It can also serve as an initial basis for certification or accreditation, since many States, as well as the National Registry, require this curriculum.

Objective of the Course Guide

The standards set forth in this course guide would be used as a guide for the development and evaluation of EMT-Intermediate training programs. Students enrolled in the programs are taught to work with and under the direction of physicians (including standing orders) in providing emergency medical care in the field, at the scene, or during transit to an emergency care center.

Description of the Occupation

The Emergency Medical Technician-Intermediate is qualified in advanced emergency care and services by a competency-based training program of clinical, didactic, and practice instruction and by a field internship. Competencies include but are not limited to the recognition, assessment, and management of medical emergencies under the direction of a physician. The EMT-Intermediate primarily provides prehospital emergency care to acutely ill or injured patients by ambulance service and mobile advanced life support units under medical command authority, and secondarily, in other appropriate settings under physician control.

An EMT-Intermediate is a person who has successfully completed both a basic EMT and an EMT-Intermediate training program and is certified or licensed.

An EMT-Intermediate training program is a program of instruction which equals or exceeds the educational goals and objectives of the National Standard Emergency Medical Technician-Intermediate Course.

"Other appropriate settings" means a facility, such as a clinic, an emergency department, or the private practice of an individual duly licensed to practice medicine in all its branches.

Competency, knowledge, awareness of one's abilities and limitations, the ability to relate with people, and a capacity for calm and reasoned judgement while under stress are essential attributes of the EMT-Intermediate. The EMT-Intermediate respects the individuality and privacy of patients and their family members.

Competency of the EMT-I

Given the knowledge, skills, and field experience, the EMT-I is competent in:

1. Recognizing a medical emergency; assessing the situation; managing emergency care and, if needed, extrication; coordinating his efforts with those of other agencies involved in the care and transportation of the patient; and establishing rapport with the patient and significant others to decrease their state of crisis;

2. Assigning priorities of emergency treatment and recording and communicating data to the designated medical command authority;
3. Initiating and continuing emergency medical care under medical control including the recognition of presenting conditions and initiation of appropriate invasive and non-invasive therapy.
4. Exercising personal judgement in case of interruption in medical direction caused by communication failure or in cases of immediate life-threatening conditions. (Under these circumstances, provides such emergency care as has been specifically authorized in advance.)

Operational Policies

Student matriculation practices and student and faculty recruitment should be non-discriminatory with respect to race, color, creed, sex, or national origin. Student matriculation and student and faculty recruitment practices are to be consistent with all laws regarding non-discrimination. It is recommended that records be kept for a reasonable period of time on the number of students who apply and the number accepted, as well as placement history of those who complete the program.

—Announcements and advertising about the program shall reflect accurately the training being offered.

—The program shall be educational and students shall use their scheduled time for educational experiences.

—Health and safety of students, faculty, and patients shall be adequately safeguarded.

—Costs to the student shall be reasonable and accurately stated and published.

—Policies and processes for student withdrawal and refunds on tuition and fees shall be fair, published, and made known to all applicants.

Curriculum Description

Instructional content of the educational program should include as a minimum the successful completion of stated educational objectives that fulfill local and regional needs and that satisfy the requirements of this curriculum section.

The curriculum should be organized to provide the student with knowledge required to understand fully the advanced skills that are taught in this program. It is important not to lose sight of the original purpose of the EMT-Intermediate level. The curriculum includes only the portions of the NSTC for the EMT-P which are relevant for this level of care. Students should have an opportunity to acquire clinical experience and practice skills related to the emergency medical care of these patients. Students should also understand the ethical and legal responsibilities they assume as students and are being prepared to assume as graduates.

The educational program should be designed to provide the knowledge that will allow the student to arrive at decisions based on accepted medical knowledge and that will permit the professional growth of the EMT-Intermediate.

The program should consist of three components: didactic lecture; clinical instruction; and supervised field experience in an advanced life support unit which functions under a medical command authority. The time required to complete each component may vary, in part being dependent upon the ability

of students to demonstrate their mastery of the educational objectives by written, verbal, and practical examination.

The program should maintain on file for each component of the curriculum a reasonably comprehensive list of the terminal performance objectives to be achieved by the student. These objectives should delineate mastery in all competencies identified, including curriculum documentation, measurement techniques used, and the records maintained on each student's work.

The student should be informed about the methods and data used in determining grades and about the mechanism for appeal. Conditions governing dismissal from the program should be clearly defined in writing and distributed to the student at the beginning of the training program.

Evidence of student competence in achieving the educational objectives of the program should be kept on file. Documentation should be in the form of both written and practical examinations.

Classroom, clinical, and field faculty should also prepare written evaluations on each student. Documentation should be maintained identifying the counseling given to individual students regarding their performance and the recommendations made to correct inadequate performance. Documentation on whether or not the student followed through on faculty recommendations should also be maintained. Instruction should be supported by performance assessments.

Faculty should be presented with the program's educational objectives for use in preparation of lectures and clinical and field practice. The course coordinator should ensure that stated educational objectives are covered and should answer any questions from students or clarify information presented by a lecturer.

1. Didactic instruction—lectures, discussions and demonstrations presented by physicians and others who are competent in the field.
2. Clinical (in-hospital) and other settings—Instruction and supervised practice of emergency medical skills in critical care units, emergency departments, operating rooms and other settings as appropriate.

   Supervision in the hospital can be provided either by hospital personnel, such as supervisory nurses, department supervisors, and physicians, or by the program instructor. The hospital practice should not be limited to the development of practical skills alone, but should include knowledge and techniques regarding patient evaluations, pathophysiology of medical and surgical conditions, development of patient rapport, and care for and understanding of the patient's illness. Documentation should be maintained for each student's performance in all of the various areas. A frequent performance evaluation is recommended.
3. Field Experience—The field internship is a period of supervised experience on an intensive care vehicle. It provides the student with a progression of increasing patient care responsibilities which proceed from observation to working as a member of a team. There should be a provision for physician evaluation of student progress in acquiring the desired skills to be developed through this experience.

   The intensive care vehicle should have telecommunication with medical command authority. The student must be under the direct supervision

and observation of a physician, or nurse with experience in the prehospital ALS setting, or an EMT-Paramedic approved by the medical command authority. The experience should occur within an emergency medical care system that involves EMT-Paramedics in the provision of advanced emergency medical services and that maintains a defined program of continuing education for its personnel.

The initial position of the student on the prehospital care team should be that of observer. After progressing through record keeping and participation in actual patient care, the student should eventually function as the patient care leader. However, the student should not be placed in the position of being a necessary part of the patient care team. The team should be able to function without the necessary use of a student who may be present.

The Emergency Medical Service being used should have established a continuing education program for its field personnel that adequately maintains an acceptable level of required skills and knowledge.

The Emergency Medical Service should function under communications with a medical control authority that provides prehospital direction of the patient care.

The Emergency Medical Service should also have a program to provide prompt review of prehospital care provided by the EMT-Intermediate.

General courses and topics of study must be achievement oriented and shall provide students with:

1. The necessary knowledge, skills, and attitudes to perform accurately and reliably the functions and tasks stated and implied in the above "Description of the Occupation";
2. Comprehensive instruction which encompasses;
   a. Orientation to the occupation
      i. Responsibilities of the role
      ii. Inter-professional responsibilities
      iii. Career pathways in emergency medical services
      iv. Legal responsibilities
   b. Development of interpersonal skills
      i. Awareness of one's abilities and limitations
      ii. Ability to accept direction
      iii. Awareness of impact to others
      iv. Willingness and ability to communciate with others
      v. Ability to build a working relationship with patients and peers
      vi. Ability to function as a team member and/or team leader
      vii. Ability to accept patients as they present themselves, without passing judgements
      viii. Ability to involve others significant to the patient
      ix. Ability to respond to a patient's sense of crisis
   c. Development of knowledge and clinical skills appropriate for this level of care
      i. Roles and responsibilities of the EMT-Intermediate
      ii. Emergency medical services systems and medical control

iii. Medical/legal considerations
iv. Communication procedures
v. Medical terminology
vi. Patient assessment including both a primary and secondary survey
vii. Airway management procedures
viii. Assessment and management of shock

Course Planning Considerations

Course Design

The program is divided into sections. The emphasis of each section is on (1) the identification of the skills and knowledge required of the student, (2) methods to assist the student in the accomplishment of these objectives, and (3) a procedure for the evaluation of student competency. Also included in some sections are optional skills that have been demonstrated in some prehospital care systems to be effective in the field when performed by prehospital personnel; however, these skills are not necessary to meet the criteria for an EMT-Intermediate in the National Standard Training Curriculum.

The training program is presented using a variety of teaching strategies — lectures, group discussions, demonstrations, laboratory demonstrations, simulated practice sessions, clinical experience, and an internship on the vehicle. The thrust of this training is both to develop specific skills and to develop general principles of assessment and treatment based on fundamentals of normal anatomy and physiology and of pathophysiological processes. Students are encouraged to apply the general knowledge and principles presented in the course to a broad spectrum of specific patient conditions.

Because the emphasis of the training is on the development of student competency, the number of hours selected is only a reference to be used when planning the course and should not be used as a measure of successful completion. A student will have successfully completed the course when he has demonstrated mastery of the skills and knowledge expected of him, irrespective of the hours involved. The exact number of hours has not been designated because it will vary according to the needs within a given state or area. However, a recommended range of hours is found on page 18 of this course guide.

Planning Considerations

The sponsoring institution of an EMT-Intermediate training program should be an accredited post-secondary education institution, such as a university medical center, senior college, community college, vocational school, medical center or other institution that meets comparable standards for education in this field. All institutions should be affiliated with an accredited medical center, hospital and EMS system that support EMT-Intermediate education and training. This should include supervised practice under a medical command authority in an out-of-hospital setting.

Sponsorship does not exclude Emergency Medical Service-based programs or those training programs operated by Federal agencies. However, Emergency Medical Service or military-based training programs should be associated with an accredited medical facility that provides sufficient clinical experience for the student.

EMT-Intermediate training institutions should all have State approval through the lead EMS agency in that State.

Class Size

The development of advanced emergency medical skills and knowledge to an acceptable level in each student requires an ample opportunity for each student to practice and gain experience in simulated and clinical settings. Classes must be kept relatively small to maximize student/instructor interaction.

Rather than indicating a class size, the following instructor/student ratios are suggested:

—Classroom: The class size will not exceed 20 students, except where special circumstances exist.

—Practice sessions: For practice sessions, the class size will be limited by the availability of equipment and instructors to assist and supervise the students. In general, it is recommended that there be no more than 10 students for each instructor during the practice sessions.

—Clinical experience: Assignments should be made in such a way as to provide one-to-one patient-care contact and develop clinical competencies. In a large Intensive Care Unit there could be as many as 4–5 students, whereas in the operating room there may be only one student.

—Field internship: Only one student should be assigned to a vehicle at a time.

Students

A. Students should be provided with a clear description of the program and its content, including learning goals, course objectives, and skills to be attained.

B. Selection prerequisites
   1. High school graduation or general educational equivalent.
   2. Current certification as a basic Emergency Medical Technician.
   3. An admissions committee's final selection based upon the following criteria.
      a. Interview to determine:
         i. Attitude
         ii. Professionalism
         iii. Motivation
         iv. Dependability
      b. Testing
      c. Evaluation of past performance
      d. Physical health
         i. Program officials should determine that the applicant's health will permit him/her to complete the program. Students must be informed of and have access to the usual student health care services of the institution. Where appropriate, emergency medical care must be available.
   4. Counseling services should be accessible to students.
   5. Students should be clearly identified by nameplate, uniform, or other apparent means to distinguish them from graduate emergency medical service personnel, other health professionals, workers, and students.
   6. Criteria for successful completion of each segment of the curriculum and for graduation should be given in advance to each student. Appropriate appeal mechanisms should be made known and be available to the students.

Faculty

Structure and Qualifications.

Medical Director

Each program shall have a medical director who shall be a licensed physician and who shall provide direction over all clinical instruction and clinical practice experience required by the program.

The medical director must be knowledgeable and experienced in emergency medical care and should have demonstrated ability in education and/or administration.

The medical director should be primarily responsible for the recruitment, selection, and orientation of instructors and clinical preceptors, and for the maintenance by qualified physicians of an ongoing evaluation of student's clinical and field experience and other clinical activities.

The medical director may also be the program director.

Program Director

The program director provides overall direction and coordination of the planning, organization, administration, periodic review, continued development, funding, and effectiveness of the program. Among the functions to be maintained are the processing of student applications; the selection of students; the scheduling of classes and assignment of faculty; the coordination of examination and evaluation of students, including the preparation of assessment materials; the development and availability of required equipment and materials for each class; the maintaining of an adequate inventory of training equipment, including audiovisual resources; the provision for counseling services to students on an individual and group basis; the establishment of liaison among students, program staff, the sponsoring institution and its affiliates; the supply of information about the program budget; and, as appropriate, assistance in class instruction.

The program director may also be a physician.

Instructional Faculty

The faculty should be qualified through academic preparation, training, and experience to teach the courses and topics identified in the curriculum.

Résumés of appointed faculty members should be maintained on file. Evidence should indicate faculty member experience in the area of assigned instruction.

A planned program for the continuing education of the faculty in matters relating to their teaching responsibilities should be in evidence. The faculty may include qualified physicians, nurses, EMT-Paramedics, and other individuals.

Class Schedule

The course can be presented as a full-time program. For full-time professional ambulance personnel, a full-time schedule may be appropriate. Professional part-time and volunteer ambulance personnel, however, because of limited time, may require a program that can be presented in the evenings and on weekends in segments over an extended period of time.

NOTE: If the program is to be presented part-time, it is recommended that the class meet a minimum of six hours per week for classroom lecture and practice sessions, with the clinical experience scheduled independently.

Classroom

The training program is designed to train personnel who will function as an extension of the physician and medical institution in providing prehospital care to acutely ill or injured patients. The training program, therefore, can be quite effective if it is presented in a medical institution. If the institution cannot provide the necessary facilities for the didactic segment of the program, the classroom lecture and nonclinical practice sessions could be presented at a local education institution; for example, a community college, junior college,

area vocational-technical school, or any other facility with the necessary space, equipment, and training aids. The clinical portion of the program must be based at the hospital. Field experience in the vehicle should be based wherever actual field problems can be encountered and where students, instructors, and bystanders can be protected from misadventure or environmental hazards.

The facility should be well lit to assure adequate viewing of visual aids and demonstrations. Heating and ventilation of the facility should assure student and instructor comfort.

The lecture area should contain a lectern for lesson plans, notes, and references. A large table should be provided for displaying equipment, medical supplies, and training aids, and for demonstrating emergency medical procedures. A chalkboard, projection screen, and stand for charts should be located in the lecture area. If possible, light switches should be convenient to the area.

The student area should contain tables or chairs with writing surfaces for taking notes. Chairs should be arranged for unobstructed visual access to the instructor, demonstration area, screen, etc., and to provide convenient physical access to the practical area. Sufficient space should be provided for accommodating slide and movie projectors.

Each practice area should be large enough to accommodate ten students working individually or in groups of varying sizes, as well as the equipment and medical supplies used in practicing procedures. Tables should be provided for equipment and supplies, and for use during certain procedures.

Times

The following are recommended times for this classroom phase:

Roles and Responsibilities	2–3 hours
EMS System/Medical Control	2–3 hours
Medical/Legal Considerations	2–3 hours
Communications	2–4 hours
Medical Terminology	1–2 hours
Patient Assessment	18–26 hours
Airway Management	3–4 hours
Pathophysiology of Shock	6–10 hours

Clinical Experience

Clinical affiliations should be established and confirmed in written affiliation agreements with institutions and agencies that provide medical direction to and continuing assessment of student performance. Clinical experience should include direct patient care responsibilities which are necessary for completion of the program's educational objectives. Documentation of the clinical affiliation and agreement to allow students to carry out patient care should be kept on file.

The patients to whom the students are exposed should have disease and injury conditions comparable with those the student will experience in the prehospital care situation. As such, it will be necessary to have access to the hospital units specified below. If a unit is not available for the clinical experience, then adjustments should be made, if possible, to insure that the activities proposed for that unit are included in the activities of other units.

Specific guidelines for the clinical units are included in the instructor outlines. The student should receive supervised experience in each of the following clinical areas:

—Emergency department

—Intravenous team

The instructor outlines stipulate guidelines for clinical training, including skill objectives for a variety of patient care procedures and a list of activities the students should observe, assist in, or perform in the various hospital departments.

Supervised Field Experience

There are basically only four skills which the EMT-Intermediate curriculum adds to the material already gained by the basic EMT. These are 1) first and foremost, better patient assessment skills; 2) administration of intravenous fluids; 3) esophageal obturator airway; and 4) medical communications.

Because all of these skills, with the exception of radio medical communications, are going to be learned in the hospital environment, it is important that the EMT only learn how to handle the peculiarities of these skills which the field environment brings. Starting an IV in a wrecked automobile in the dark with rain pouring down is extremely more difficult than starting it in the clean environment of an operating room or an emergency department. It is the same skill, but more difficult in one area than another. Placement of an esophageal obturator airway is usually not a skill that can be practiced in the hospital except on a manikin, and therefore an EMT will usually do this on a live patient in the field experience. Although most EMT's are familiar with radio communication, relaying medical information that one gathers from patient assessment over the radio is a unique experience when first attempted and initially many things are left out. It is only with experience that this can be done concisely, completely, and accurately.

Because of the widely varying backgrounds of EMT-Intermediate students, it is difficult to anticipate how much time each student is going to require to become accomplished in these four areas. The EMT with a year or more at the basic EMT level and with other prior medical background will require less time to become field proficient than would the student who has had little or no prior training or experience. Therefore, it will become the responsibility of the instructor to individualize not only from class to class, but from student to student, as to when the instructor believes that student to be trained well enough to function independently. This puts the major burden of responsibility on the instructor, if the students are to be those who are capable of providing the kind of patient care demanded by users of good EMS systems in the 1980's.

Cost

Because of the variation in the length of training programs, reimbursement rates for instructors, and costs in the purchase of training aids, an average cost per program or per student is not available. The cost will vary among sponsoring institutions. When calculating the cost for the program, however, the following should be considered:

—Instructional costs

—Administrative costs

—Training aids needed but not already available through the sponsoring institution or local resources
—Printing and reproduction
—Expendable supplies and materials
—Depreciation of equipment
—Maintenance

Materials and Equipment

The materials and equipment recommended for this course are listed in the Instructor's Lesson Plans. The course coordinator is advised that the equipment specified is minimal and designed to provide a standardized base of equipment for the course. Where additional material or equipment is available in the area, the course coordinator is encouraged to make such supplementary material accessible.

References

A bibliography is listed at the end of the Instructor's Lesson Plans. Instructors and course coordinators are encouraged to continue their review of recently published texts as well as the many periodicals related to the field of emergency medical services. A library should be accessible and contain an adequate supply of up-to-date books, periodicals, and other reference materials related to the curriculum.

Course Implementation Considerations

Instructor's Lesson Plans

The Instructor's Lesson Plans are designed to provide the technically competent instructor with the basic educational materials needed to conduct the advanced-level training programs for emergency medical technicians.

IT IS NOT THE PURPOSE OF THE INSTRUCTOR'S LESSON PLANS TO PROVIDE A COMPLETE SKILL AND KNOWLEDGE PACKAGE FROM WHICH THE INSTRUCTOR CAN OBTAIN THE TECHNICAL COMPETENCE NECESSARY TO CONDUCT THE TRAINING.

Testing and Evaluating the Student

It is essential that each student be evaluated on his proficiency in skills and his knowledge at the completion of each session. Skill evaluation sheets should be developed for each skill in each unit. These sheets can be used as guides for evaluating the student's skill proficiency. However, sometime prior to the end of the course, a separate evaluation of skills should be performed by individuals who were not directly involved in the student's training. Certificates of course completion should not be granted until each student demonstrates an acceptable level of competency in all three components of EMT-I training (didactic, clinical, and field internship). The evaluation of the knowledge objectives is left to the discretion of the instructor, according to pre-determined behavioral objectives. Testing of knowledge should stress areas of clinical relevance and basic science. Quizzes, end-of-section exams, and a formal end-of-course exam is strongly recommended. No matter what type of evaluation system is established, students should be kept informed of their progress, should be given additional activities to supplement weak areas, and should not be allowed to graduate unless he or she can pass predetermined levels of competency.

As previously stated, the emphasis is on *student competency*, rather than on the total number of hours the student is involved in the program. Thus, it is possible for the student to be tested and given credit for any section. With this method it is possible for students to receive credit for prior training and experience. This could be particularly applicable for those sections that are primarily a review of basic skills.

Certification

Upon successful completion of the training program, the student should receive a certificate of course completion. To be certified and/or licensed as an EMT-Intermediate a written examination and the demonstration of practical skills are necessary.

The Department of Transportation recommends that the National Registry of EMT's be used as the evaluation tool for the basis of State certification. This is consistent with the U.S. Department of Health and Human Services (HHS) recommendation that "A broadly representative national (non-federal) certification." They support this stand by pointing to the "wide diversity of standards employed by (State) licensure boards and (State) certifying agencies. This diversity creates a host of problems related to the basic quality of health services as well as obstacles to geographic and career mobility."

The National Academy of Sciences also "favors the development of national certification examinations that could be used by states." However, the Department of Transportation's support of the use of the National Registry EMT-Intermediate examination is best summed up by Mr. Leo Swartz, the past

EMS Division Chief. He states that the National Registry "must provide the basis for quality, uniformity, and in turn, reciprocity in the EMT field of endeavor. In addition, it contributes to status, stature, credibility, and respectability."

Successful completion of the program in its entirety should not be based on a total number of classroom or clinical hours logged by the student. Although recommended times have been listed, this information is to be used for course planning purposes and not for measuring student achievement.

As described previously, the course in its entirety reflects the criteria established for the EMT-Intermediate by the DOT EMT-Paramedic Committee which was composed of field Medical Directors, educators, and EMT-Paramedics. The Instructor's Lesson Plans, specific skill and knowledge objectives have been included. If the student can complete the skill and knowledge objectives for each division, then he will have met the criteria established by the task force.

Continuing Education and Refresher Training

Because of the vast variety of medical emergencies, the EMT-Intermediate is required to continue his education because:

—He often does not receive adequate practice experience in the field to maintain high proficiency in skills learned during the program.

—There may be new techniques or procedures with which the sponsoring institution would like the EMT-Intermediate to become acquainted.

—A constant review of case studies and procedures increases the effectiveness of the EMT-Intermediate in the field.

—EMT-I's should recognize that 80% or more of the care they provide is based upon the skill and knowledge learned as a basic EMT.

The amount of continuing education desirable for each EMT-I will vary among given locations, depending on such factors as the number of calls, the types of cases seen, and the amount of communication with the sponsoring institution. Each continuing education program must be molded to meet the needs of the personnel, but the following continuing education mechanisms are suggested:

—Periodic clinical experience in the hospital units under direct supervision to maintain skills.

—Periodic case review of calls by EMS personnel and hospital personnel at a group meeting.

—Periodic seminars sponsored by the appropriate EMS agency.

—Periodic seminars sponsored by recognized organizations—for example, the American College of Emergency Physicians and the Emergency Department Nurses Association.

—Formal refresher training program.

—Formal evaluation (direct observation and/or practical) by the Medical Director of the following EMT-Intermediate skills:

(1) History taking

(2) Physical examination (primary and secondary assessment)

(3) CPR - one and two rescuer

(4) Infant resuscitation; Rx of airway obstruction

(5) Esophageal obturator airway placement

(6) Bag-valve mask and bag-valve-tube ventilation
(7) Spinal immobilization, including application of cervical collar, short and long boards
(8) Fracture immobilization, including traction splinting
(9) Voice and communications procedures, including actions during communications failure
(10) Intravenous therapy
(11) Application of pneumatic anti-shock garment (PASG)
(12) Defibrillation (optional)
(13) Endotracheal intubation (optional)

Student Records and Identification

Report of medical examination upon entry to and exit from the program should be maintained. Examination on entry should include evidence of policies that state the student(s) is free of all communicable and infectious diseases and that the student's general health should allow him or her to accomplish all skill objectives as defined in this curriculum.

A record of class and practice participation and evidence of knowledge and skill competence obtained by each student throughout the education and training program should be maintained.

Copies of oral and written examinations and assessments of the student's developing and attained competencies should be maintained for periodic review and analysis.

A descriptive synopsis of the current curriculum should be on file. Statements of course objectives, copies of course outlines, class schedules, schedules of supervised clinical experience, and teaching plans should be on file and available for review. A copy of the complete curriculum should be on file.

Finances

Budgets and sources of income should be available for review so as to determine that fees are appropriate and that the tuition is actually being utilized for the EMT-Intermediate program. The budget should reflect remuneration for all primary faculty, with volunteer time being noted. Finally, there should be evidence of sufficient funds to finance adequately the completion of a program.

—Financial resources adequate for the continued operation of the educational program should be ensured for each class of students enrolled.
—The institution should not charge excessive student fees.
—Advertising should accurately describe the educational program and training.
—The program should not substitute students for paid personnel in work on intensive care units, in the field, or for others who work or teach in the clinical facility.
—There should be evidence of an auditing and an accounting of financial resources required, generated and expended by the program.

Advisory Committee

An advisory committee may be appointed to provide counsel and advice regarding the objectives and operation of the training program, its continuing development, and the value of its graduates within the EMS system. For

maximum effectiveness an advisory committee may include representation from the institutions and agencies involved and affected by the program, such as hospitals; police and fire protection agencies; consumers; local or regional medical, nursing, and paramedic organizations; other physicians, nurses, and EMT-Intermediates; the regional health planning agency; local government representatives; attorneys; private ambulance services; and, in an ex officio capacity, the medical/program directors and coordinators.

Reports

Annual reports of the operation of the program should be prepared and available for review by the appropriate agency. The program shall provide evidence of an established schedule for self-analysis in the maintenance and improvement of the educational and training effort, and periodic reports of these should be on file.

Contents

Foreword

Emergency Medical Technicians have performed a valuable service for our country for a number of years. The role of the Basic EMT contributes greatly to the enhancement of emergency medical care of the ill and injured. The Basic EMT level is perceived to be somewhat of an "independent practice" role in that the EMT at the scene has all the knowledge and skills to deliver care without orders from another section of the EMS system. The role of the advanced EMT is significantly different in that there is a "partnership role" with the institution providing Medical Control. Therefore the transition from a basic provider level to the advanced provider level is a very important one.

One of the many tasks involved in developing advanced prehospital care is determining what the optimal level of care is. From a national perspective that optimal level is considered to be the EMT-Paramedic. The content of the EMT-P training program was arrived at by the National Academy of Science/ National Research Council in the early 1970's.

The EMT-P curriculum then and now is the end result of the careful balancing of many different factors. It was recognized early that the EMT-P would be the highest trained person available in the prehospital setting and therefore needed training in as many potential emergency situations as possible. This had to be balanced with facts such as the cost, the length, and the degree of difficulty of such programs would have to remain within reason. The availability of skills maintenance opportunities had to be balanced with the *need* for certain difficult techniques. When all of these and many other factors were considered, it appeared the optimal was the EMT-P training level.

However, over time greater emphasis was given to certain of the same factors considered in the development of the EMT-P level, and in reconsidering with a change in emphasis, a *different* result appeared. Emphasis was not placed on training for as many emergencies as possible but more on those areas of greatest incidence. Similarly the time and depth of preparing was altered, and those skills that required less skill maintenance were included.

The result of the re-thinking did not change the conclusion of what is optimal—the EMT-P—but did result in purposeful levels other than the basic EMT and the EMT-Paramedic. In 1980 the National Registry of Emergency Medical Technicians, recognizing the need for an evaluation tool for the most significant of these levels, developed the EMT-Intermediate examination.

It became clear that depending on the factors one chose to emphasize, there could be numerous options for levels between the Basic EMT and EMT-Paramedic levels. Therefore, in 1982 Department of Transportation/National Highway Traffic Safety Administration (DOT/NHTSA) sponsored a study conducted by the National Council of State Emergency Medical Services Training Coordinators. The purpose of the study was to collect data nationwide and to collate this information and ultimately recommend both content and nomenclature for existing levels. The National Council project identified the significant levels of program development across America and subsequently labeled the first level beyond the Basic EMT as the EMT-Intermediate.

It is important to understand the true meaning of the data collected during this project for it substantiates the principle from which the EMT-Intermediate level has been developed. Simply stated, the EMT-Intermediate level has as its base

the basic EMT program and then has certain proven clinical skills and knowledge to support the skills added to the basic program. The program is not intended necessarily to be a stepping stone to the EMT-Paramedic level, but rather to be complete for that particular level of patient care. The application of this principle impacts dramatically on the implementation of the EMT-Intermediate level. The "EMT plus" orientation versus the "EMT-P minus" attitude helps to maintain perspective when developing the training program.

The National Paramedic Committee was charged in mid-1983 with the development of a curriculum for the EMT-Intermediate level. This level does not conflict or compete with the EMT-Paramedic level; it is simply another level that exists as a result of different factors being emphasized.